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The quality of simulation of the seasonal cycle and annual amount of precipitation over the Black Sea is considered using the calculations of 36 global numerical models (173 realizations) from the Coupled Model Intercomparison Project Phase 6 (CMIP6). The calculation results are compared with the ERA5 reanalysis data for the historical period of 1959–2022. It is shown that most of the CMIP6 models poorly simulate the climatic seasonal cycle and annual amount of precipitation over the Black Sea. In general, the results of modeling winter precipitation are more consistent with the ERA5 reanalysis data than summer precipitation. This indicates a low quality of parameterization of convective precipitation in the Northern Hemisphere midlatitudes in most of the CMIP6 models. Five of 36 models that can be used for estimating annual precipitation over the Black Sea are selected, and only three of the models can be used to estimate monthly precipitation.

Keywords: precipitation, seasonal cycle, Black Sea, CMIP6

Tab. 1. Fig. 2. Ref. 15.